

| ORDER FOR SUPPLIES OR SERVICES | | | | | PAGE 1 | OF 4 | PAGES 4 |
|--|--|--|---------------------------|---|-------------------|--|-----------------------------|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| 1. DATE OF ORDER | | 2. CONTRACT NO. (If any) RFP3-094978 | | 6. SHIP TO: | | | |
| 3. ORDER NO. DO-1 | | 4. REQUISITION/REFERENCE NO. | | a. NAME OF CONSIGNEE | | | |
| 5. ISSUING OFFICE (Address correspondence to) | | | | . STREET ADDRESS | | | |
| | | | | c. CITY | | d. STATE | e. ZIP CODE |
| 7. TO: | | | | f. SHIP VIA | | | |
| a. NAME OF CONTRACTOR | | | | 8. TYPE OF ORDER | | | |
| b. COMPANY NAME | | | | <input type="checkbox"/> a. PURCHASE REF YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated. | | <input checked="" type="checkbox"/> b. DELIVERY -- Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract. | |
| c. STREET ADDRESS | | | | | | | |
| d. CITY | | e. STATE | f. ZIPCODE | | | | |
| 9. ACCOUNTING AND APPROPRIATION DATA | | | | 10. REQUISITIONING OFFICE | | | |
| 11. BUSINESS CLASSIFICATION (Check appropriate box(es)) | | | | | | | |
| <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED | | | | | | | |
| 12. F.O.B. POINT NASA Lewis Research Center | | 14. GOVERNMENT B/LNO. | | 15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) | | 16. DISCOUNT TERMS | |
| 13. PLACE OF | | | | | | | |
| a. INSPECTION NASA Lewis Research Center | | b. ACCEPTANCE NASA Lewis Research Center | | | | | |
| 17. SCHEDULE (See reverse for Rejections) | | | | | | | |
| ITEM NO. (a) | SUPPLIES OR SERVICES (b) | | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
| 1 | <u>Mission Integration Planning (MIP)</u> The Contractor shall provide ISS payload planning, integration, and analysis to the NASA Microgravity Science Division in accordance with Exhibit 2 SOW section 4.3. Reference documents include the following: a) SPIP Vol. 1 – Station Program Management Plan (SSP-50200) b) SPIP Vol. 2 - Program Planning and Manifesting (SSP-50200) c) SPIP Vol. 4 - Payload Integration (SSP-50200) d) ISS Payload Integration Agreement Blank Book (SSP-52000-PIA-PRP) e) ISS Payload Data Sets Blank Book (SSP-52000-PDS) | | 1 | lot | | | |
| 40 SEE BILLING INSTRUCTIONS ON | 18. SHIPPING POINT | | 19. GROSS SHIPPING WEIGHT | | 20. INVOICE NO. | | 17(h) TOT. (Cont. pages) |
| | 21. MAIL INVOICE TO: | | | | | | |
| | a. NAME | | | | | | 17(i) GRAND TOTAL |
| | b. STREET ADDRESS (or P.O. Box) | | | | | | |
| | c. CITY | | d. STATE | | e. ZIP CODE | | |
| 22. UNITED STATES OF AMERICA BY (Signature) | | | | 23. NAME (Typed) TITLE: CONTRACTING/ORDERING OFFICER | | | |

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Previous edition not usable

OPTIONAL FORM 347 (REV. 6/95)
Prescribed by GSA/FAR 48 CFR 53.213(e)


If desired, this order (or a copy thereof) may be used by the Contractor as the Contractor's invoice, instead of a separate invoice, provided the following statement(signed and dated) is on (or attached to) the order: "Payment is requested in the amount of \$_____. No other invoice will be submitted." However, if the Contractor wishes to submit an invoice, the following information must be provided; contract number (if any), order number, item number(s), description of supplies or service, sizes, quantities, unit prices, and extended totals. Prepaid shipping costs will be indicated as a separate item on the invoice. Where shipping costs exceed \$10 (except for parcel post), the billing must be supported by a bill of lading or receipt. When several orders are invoiced to an ordering activity during the same billing period, consolidated periodic billings are encouraged.


Quantity in the "Quantity Accepted" column on the face of this order has been: ☐ inspected, ☐ accepted, ☐ received
by me and conforms to contract. Items listed below have been rejected for the reasons indicated.

| | | | | | |
|--------------------|---------|--------------|---------------|--|------|
| SHIPMENT NUMBER | PARTIAL | | DATE RECEIVED | SIGNATURE OF AUTHORIZED U.S.GOV'T REP. | DATE |
| | FINAL | | | | |
| TOTAL CONTAINERS | | GROSS WEIGHT | RECEIVED AT | TITLE | |

[illegible]

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | 2 of 4 | |
|---|---|-----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | | ORDER NO. DO-1 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 1 (continued) | <p>f) ISS Pressurized Payload Interface Requirements Document (SSP-57000)</p> <p>g) ISS Pressurized Payload Hardware Interface Control Document Template (SSP-57001)</p> <p>h) ISS Pressurized Payload Software Interface Control Document Template (SSP-57002)</p> <p>i) ISS Generic Payload Verification Plan (SSP-57010)</p> <p>j) LeRC MSD Mission Integration Team Charter – Rev. A, 9-1-98</p> <p>The Contractor shall complete the development of an end-to-end PI integration process (FCF) initiated by MSD. The Contractor shall also document and remain cognizant of PI integration processes for non-FCF payloads. The Contractor will assume the activity in its current state at contract award. The Contractor shall complete the development of and thereafter maintain PI specific experiment to FCF generic integration documentation including, but not limited to, the Interface Control Document (ICD), Integration Agreement (IA), Payload Verification Plan (PVP), and Integration schedule. The Contractor shall also develop and maintain any tools required to facilitate the integration process, while maintaining compatibility to the ISS program. The Contractor shall assure that the ISS deliverables, templates, and appropriate processes are defined and understood and shall also provide systems engineering expertise to establish appropriate requirements flow to and from the payload, FCF, and ISS.</p> <p>The Contractor shall maintain the Payload Planning Database and upgrade as necessary to remain compatible to the MRPO and ISSPO databases. The Contractor shall support the payloads in the development of Mission Evaluation Requests (MERs) and coordinate the submittal of MER data to the ISSPO. The Contractor shall maintain a LeRC Traffic Model to document the current manifest based on MER submittals to ISS.</p> <p>The Contractor shall complete the architecture and design of a web-based payload data entry process to facilitate payload data management and manipulation. The Contractor shall implement design of the ISS MSD database that will provide a user interface through the ISS MSD Utilization Website. The Contractor shall architect, administer, and implement this ISS MSD Utilization Website, including server uploads and verification of functionality. The Contractor shall also maintain the ISS MSD Utilization Website, including formatting and uploading graphics, documents, links, and</p> | | | | | | |
| TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE – CONTINUATION | | | | | | 3 of 4 | |
|---|--|-----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | | ORDER NO. DO-1 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 1 (Continued) | <p>other inputs provided in the website architecture. The Contractor shall consider approaches for streamlining implementation, user interface and navigation, and site improvements. The Contractor shall incorporate and maintain the existing database capability, which provides ISS technical requirements management for change revisions and Preliminary Interface Revision Notices (PIRN) tracking and reviews for the LeRC payload community. The database should be protected from inadvertent data entry, erasure, and access. MSD will continue to provide database functional requirements throughout the development process for the ISS MSD database that will provide a user interface through the ISS MSD Utilization Website. The database capabilities should be expandable to accommodate evolving and expanding MSD requirements including preliminary MER inputs through L-24 months, payload PIA addenda, datasets, ICD, schedule inputs, detailed reporting capabilities, and data interdependencies (including ISS integration tools compatibility such as PDL).</p> <p>The Contractor shall attend ISS teleconferences to track and monitor the creation of and revisions or Change Requests (CRs) to all ISS payloads documentation and to track and monitor Preliminary Interface Revision Notice (PIRN) creation and disposition. The Contractor shall serve as the MSD payloads point of contact for ISS documentation reviews, release notifications, comment collection, Technical Change Meetings (TCMs), and PIRN Technical Reviews (PTRs), where appropriate.</p> | | | | | | |
| 2 | <p><u>Milestones and Reviews</u></p> <p>The contractor shall meet the following milestones and participate in the following meetings:</p> <ul style="list-style-type: none"> a) MIP Technical Interchange Meeting (Monthly) b) ISS teleconferences (i.e. Payloads Control Board, PIRN Technical Review, Payload Mission Integration Team, Configuration Management) (Weekly) c) MSD ISS Program Review (Monthly) | | | | | | |
| 3 | <p><u>Hardware/Software Deliverables</u></p> <p>The contractor shall furnish the following software for the ISS MSD Utilization Website and Database and for the Payload Planning Database in the implementation of item 1, along with the appropriate training in the software operations:</p> <ul style="list-style-type: none"> a) ISS MSD Utilization Website Update (weekly) b) ISS MSD Utilization Website PIRN Matrix Update (weekly) | | | | | | |
|  7632inew120 TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE – CONTINUATION | | | | | | 4 of 4 | |
|---|--|-----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER 9/17/98 | | CONTRACT NO. RFP3-094978 | | | ORDER NO. DO-1 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 3 (Continued) | c) ICD/IRD PIRN Database Update and Tracking Matrix Report (weekly) d) Payload Planning Database Update (as required) | | | | | | |
| 4 | <p><u>Document Deliverables</u></p> <p>The contractor shall furnish the following documentation in the implementation of item 1:</p> <p>a) Change Revision (CR) tracking matrix report per Contractor's format delivered weekly - Consists of document matrix summarizing status of ISS Change Revisions (CRs) including date initiated, document affected, review cycle, LeRC participation, current status, date to control board, etc.</p> <p>b) Document review status reports per Contractor's format delivered monthly - Consists of brief summary of ISS payload documents under review, including date released, comment due date, LeRC reviewers, TCM date and participation, disposition of LeRC comments, date to control board, etc.</p> <p>c) Payload MER data delivered per ISS format and planning template</p> <p>d) MSD Payload Database Expansion Plan delivered award plus 2 months</p> <p>e) LeRC Traffic Model (updated as required) - Consists of one-page graphic depicting five-year LeRC ISS manifest consistent with MER submittals to ISS showing up and down traffic on a flight by flight basis for all LeRC payloads, including FCF commercial and international payloads (current version to be provided)</p> <p>f) ISS MSD Utilization Website architecture delivered award plus 2 months</p> <p>g) Status reports of end-to-end PI integration process development and documentation. Submit plan for completion of processes and documentation delivered monthly.</p> | | | | | | |
| 5 | <u>Government Furnished Equipment</u> N/A | | | | | | |
| 6 | <u>Government Furnished Facilities</u> N/A | | | | | | |
| 7 | <p><u>Government Contacts</u></p> <p>The contractor shall have access to consultation with:</p> <p>a) MSD ISS Utilization Manager b) MSD FCF Project Team c) MSD PI Specific Hardware Project Managers</p> | | | | | | |
| 8 | <p><u>Period of Performance</u></p> <p>The period of performance for this Delivery Order is 6 months, anticipated to be from 6/7/99 - 12/7/99.</p> | | | | | | |
| 9 | Clause H.16 Fee Matrix Structure 4 applies. | | | | | | |
|  7632inew120 TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES | | | | | PAGE 1 | OF 3 | PAGES 3 |
|--|---|--|---------------------------|---|-------------------|--|-----------------------------|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| 1. DATE OF ORDER | | 2. CONTRACT NO. (If any) RFP3-094978 | | 6. SHIP TO: | | | |
| 3. ORDER NO. DO-2 | | 4. REQUISITION/REFERENCE NO. | | a. NAME OF CONSIGNEE | | | |
| 5. ISSUING OFFICE (Address correspondence to) | | | | . STREET ADDRESS | | | |
| | | | | c. CITY | | d. STATE | e. ZIP CODE |
| 7. TO: | | | | f. SHIP VIA | | | |
| a. NAME OF CONTRACTOR | | | | 8. TYPE OF ORDER | | | |
| b. COMPANY NAME | | | | <input type="checkbox"/> a. PURCHASE REF YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated. | | <input checked="" type="checkbox"/> b. DELIVERY -- Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract. | |
| c. STREET ADDRESS | | | | | | | |
| d. CITY | | e. STATE | f. ZIPCODE | | | | |
| 9. ACCOUNTING AND APPROPRIATION DATA | | | | 10. REQUISITIONING OFFICE | | | |
| 11. BUSINESS CLASSIFICATION (Check appropriate box(es)) | | | | | | | |
| <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED | | | | | | | |
| 12. F.O.B. POINT NASA Lewis Research Center | | 14. GOVERNMENT B/LNO. | | 15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) | | 16. DISCOUNT TERMS | |
| 13. PLACE OF | | | | | | | |
| c. INSPECTION NASA Lewis Research Center | | d. ACCEPTANCE NASA Lewis Research Center | | | | | |
| 17. SCHEDULE (See reverse for Rejections) | | | | | | | |
| ITEM NO. (a) | SUPPLIES OR SERVICES (b) | | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
| 1 | Telescience Support Center Phase 1 Implementation & Operations and Phase 2 Development. The contractor shall furnish a comprehensive, end-to-end Telescience Support Center plan and design in accordance with Exhibit 2 SOW section 4.6, TSC Development & Implementation, and section 4.7, Telescience Operations. The following defines the list of applicable documents and memorandums: a) International Ground Segment Specification (SSP-54500) with Space Station change memorandum SSCM001076 b) Payload Operations and Integration Center (POIC) Capabilities Document (SSP-50304) c) POIC to Generic User Interface Definition Document (SSO-50305) d) LeRC TSC Requirements Document, TSC-DOC-002 | | 1 | lot | | | |
| 40 SEE BILLING INSTRUCTIONS ON | 18. SHIPPING POINT | | 19. GROSS SHIPPING WEIGHT | | 20. INVOICE NO. | | 17(h) TOT. (Cont. pages) |
| | 21. MAIL INVOICE TO: | | | | | | |
| | a. NAME | | | | | | 17(i) GRAND TOTAL |
| | b. STREET ADDRESS (or P.O. Box) | | | | | | |
| | c. CITY | | d. STATE | | e. ZIP CODE | | |
| 22. UNITED STATES OF AMERICA BY (Signature) | | | | 23. NAME (Typed) | | | |
| | | | | TITLE: CONTRACTING/ORDERING OFFICER | | | |

SUPPLEMENTAL INVOICING INFORMATION

If desired, this order (or a copy thereof) may be used by the Contractor as the Contractor's invoice, instead of a separate invoice, provided the following statement (signed and dated) is on (or attached to) the order: "Payment is requested in the amount of \$_____. No other invoice will be submitted." However, if the Contractor wishes to submit an invoice, the following information must be provided; contract number (if any), order number, item number(s), description of supplies or service, sizes, quantities, unit prices, and extended totals. Prepaid shipping costs will be indicated as a separate item on the invoice. Where shipping costs exceed \$10 (except for parcel post), the billing must be supported by a bill of lading or receipt. When several orders are invoiced to an ordering activity during the same billing period, consolidated periodic billings are encouraged.

RECEIVINGREPORT

Quantity in the "Quantity Accepted" column on the face of this order has been: ☐ inspected, ☐ accepted, ☐ received


By me and conforms to contract. Items listed below have been rejected for the reasons indicated.

| | | | | | |
|--------------------|---------|--------------|---------------|--|------|
| SHIPMENT NUMBER | PARTIAL | | DATE RECEIVED | SIGNATURE OF AUTHORIZED U.S.GOV'T REP. | DATE |
| | FINAL | | | | |
| TOTAL CONTAINERS | | GROSS WEIGHT | RECEIVED AT | TITLE | |

REPORT OF REJECTIONS

[illegible]

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | 2 of 3 | |
|---|---|----------------------------|-----------------------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | | CONTRACT NO. RFP3-094978 | | ORDER NO. DO-2 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 1 (Continued) | e) LeRC TSC Operations Concept Document, TSC-DOC-003 f) LeRC TSC Implementation Plan, TSC-DOC-004 g) HOSC to LeRC TSC ICD, Draft SSP-50366 h) Draft Memorandum of Understanding between MSFC and LeRC for Delivery of Software to Support International Space Station Payload Operations at the LeRC TSC | | | | | | |
| 2 | <p><u>Milestones and Reviews</u></p> <p>The contractor shall participate in the following meetings:</p> <p>a) TSC Phase 1 Development Technical Interchange Meeting (Monthly)</p> <p>b) LeRC TSC/MSFC POIC ISS meetings</p> <p>c) ISS Payloads Office Technical Interchange Meetings (Quarterly)</p> <p>d) Ground Services Requirements Team meetings (Monthly)</p> <p>e) HOSC Management Control Group teleconferences (Weekly)</p> <p>f) Telescience Working Group Meetings</p> <p>The contractor shall be responsible for conducting the following milestone reviews:</p> <p>a) Phase 1 TSC System Acceptance Review (TSAR)</p> <p>b) TSC Operational Readiness Reviews (TORR) for each of the ISS Increments 2-6</p> <p>c) Phase 2 TSC System Requirements Review (TSRR)</p> <p>Review content and deliverables is defined in Exhibit 2 SOW, Sections 5.4, 5.5, and 5.6. Requirements for conducting a review are defined in Exhibit 2 SOW, Section 5.</p> <p>Note: The ISS Increment schedule is determined by the ISS Assembly Sequence and the manifest schedule for LeRC payloads. The current assembly sequence is dated 10/02/98. Based on this assembly sequence, with LeRC payloads manifested on Flight 6A, the current tentative date for the Phase I TSC Acceptance Review is September 1999, the Increment 2 TSC Operational Readiness Review is February 2000, and the Phase 2 TSC System Requirements Review is July 2000.</p> | | | | | | |
| 3 | <p><u>Hardware/Software Deliverables</u></p> <p>a) The contractor shall deliver to the government all hardware, software, and documentation specified by this Delivery Order for the development, implementation, and operations of the Telescience Support Center.</p> | | | | | | |
| ➔ TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE – CONTINUATION | | | | | | 3 of 3 | |
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| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | | ORDER NO. DO-2 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 3 (Continued) | The contractor shall furnish final drawings in accordance with DID# D-04 that includes the following: a) TSC System Drawing (overall) b) TSC Audio System Drawings c) TSC Video System Drawings d) TSC Data System Drawings e) TSC Communications Drawings f) TSC Network Drawings g) TSC Timing System Drawings h) TSC Ground Track System Drawings | 10 10 10 10 10 10 10 10 10 | Each Each Each Each Each Each Each Each Each | | | | |
| 4 | <u>Government Furnished Equipment (provided in accordance with 52.245-2)</u> The following hardware and software shall be furnished by the Government to the contractor in the performance of this delivery order: a) Existing hardware, software, facility equipment, and documentation which has been procured or developed for the Phase 1 TSC Development effort currently in progress b) Interface to the LeRC local area network and telecommunications | | | | | | |
| 5 | <u>Government Furnished Facilities</u> NASA shall provide access to Government facility space in the Power Space Facility (Bldg. 333), along with office space, to assist in the accomplishment of this delivery order. The current Building 333 space available for this delivery order consists of Rooms 150 (TSC main operations area), 151, 153, 155, 102, 104 and the TSC videoconference room 108. | | | | | | |
| 6 | <u>Government Contacts</u> The contractor shall have access to consultation with: a) LeRC Telescience Support Center Project Manager b) MSD Telescience Manager | | | | | | |
| 7 | <u>Period of Performance</u> The period of performance for this delivery order is 1-year from contract start, anticipated to be from 6/7/99 - 6/7/2000. | | | | | | |
| 8 | Clause H.16 Fee Matrix Structure 4 applies. | | | | | | |
|  7632inew120 TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES | | | | | | PAGE 1 | OF 6 | PAGE |
|--|---|--|---------------------------|---|-----------------|--|-----------------------------|------|
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| 1. DATE OF ORDER | | 2. CONTRACT NO. (If any) RFP3 - 094978 | | 6. SHIP TO: | | | | |
| 3. ORDER NO. DO-3 | | 4. REQUISITION/REFERENCE NO. | | a. NAME OF CONSIGNEE NASA Lewis Research Center | | | | |
| 5. ISSUING OFFICE (Address correspondence to) NASA Lewis Research Center | | | | . STREET ADDRESS 21000 Brookpark Road | | | | |
| | | 7. TO: | | c. CITY Cleveland | | d. STATE OH | e. ZIP CODE 44135 | |
| a. NAME OF CONTRACTOR | | | | f. SHIP VIA | | | | |
| b. COMPANY NAME | | | | 8. TYPE OF ORDER | | | | |
| c. STREET ADDRESS | | | | <input type="checkbox"/> a. PURCHASE REF YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated. | | <input type="checkbox"/> b. DELIVERY -- for billing instructions on the reverse, delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract. | | |
| d. CITY | | e. STATE | | f. ZIPCODE | | | | |
| 9. ACCOUNTING AND APPROPRIATION DATA | | | | 10. REQUISITIONING OFFICE Microgravity Science Division | | | | |
| 11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input checked="" type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED | | | | | | | | |
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| 13. PLACE OF | | | | | | | | |
| a. INSPECTION | | b. ACCEPTANCE | | | | | | |
| 17. SCHEDULE (See reverse for Rejections) | | | | | | | | |
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| 1 | Space Acceleration Measurement System-II (SAMS-II): a) The Contractor shall furnish the following Space Acceleration Measurement System-II (SAMS-II) elements for the Microgravity Research Program in accordance with Exhibit 3 SOW for the remainder of hardware requiring development, the following applicable documents, and meeting the Key Milestones and Reviews defined in the following terms: (continued on Optional Form 348) | 1 | lot | | | | | |
| SEE BILLING INSTRUCTIONS ON REVERSE | 18. SHIPPING POINT | | 19. GROSS SHIPPING WEIGHT | | 20. INVOICE NO. | | 17(h) (Co pag | |
| | 21. MAIL INVOICE TO: | | | | | | | |
| | a. NAME | | | | | | 17(i) GR TOT | |
| | b. STREET ADDRESS (or P.O. Box) | | | | | | | |
| c. CITY | | d. STATE | | e. ZIPCODE | | | | |
| 22. UNITED STATES OF AMERICA BY (Signature) | | | | 23. NAME (Typed) TITLE: CONTRACTING/ORDERING OFFICER | | | | |

Previous edition not usable
CFR 53.213(e)

OPTIONAL FORM 347 (REV. 6/95)
Computer Generated Prescribed by GSA/FAR 48

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| | FINAL | | | | |
| TOTAL CONTAINERS | | GROSS WEIGHT | RECEIVED AT | TITLE | |

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| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | PAGE NO. 3 of 6 | |
|---|---|----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER 5/1/1999 | | RFP3 - 094978 | | | ORDER NO. DO-3 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 1 (continued) | Applicable documents: (continued from the Optional 347) a) The SAMS-II Project Plan, SAMS-II-001A, dated April 11, 1997, b) The Experiment Support Requirements Document for SAMS-II, PIMS001, dated Sept. 25, 1995 c) The SAMS-II System Requirements Document, SAMS-II-003, dated Oct. 23, 1995 d) The EXPRESS Rack ICD, document SSP 57201 dated June 18, 1998 e) The SAMS-II System Verification Plan, SAMS-II-007, dated Oct. 18, 1995 f) SAMS-II Operational Concept Document, SAMS-II-900, dated Oct., 23, 1995 g) SAMS-II Hardware Specifications (RTS), SAMS-II-012A, dated April 16, 1997 h) SAMS-II Hardware Specifications (ICU), SAMS-II-008, draft under review, October, 1998 i) SAMS-II Software Capabilities Document for the ICU Phase, SAMS-II-042, dated October, 98 j) SAMS-II Configuration Management Plan, SAMS-II-010, dated April 15, 1998 k) SAMS-II System Engineering Management Plan, SAMS-II-016, dated Oct. 23, 1995 l) SAMS-II Safety Critical Structures Package, SAMS-II-200, dated Nov. 7, 1995 m) SAMS-II Glossary, SAMS-II-039, dated April 16, 1997 n) SAMS-II Assembly Level Drawing Files (14 files) o) Draft Software Management Plan | | | | | | |
| TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE -- CONTINUATION**

PAGE NO.

4 of 6

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER


RFP3 - 094978

ORDER NO.

DO-3

| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) |
|---|---|----------------------------|-------------|----------------------|---------------|-----------------------------|
| 2 | <u>Milestones and Reviews:</u> The Contractor shall meet the following milestones and participate in the following management reviews a) SAMS-II Technical Interchange Meeting (monthly) b) Remote Triaxial Sensor (RTS) PreShip Reviews (RTS-EE units F04-05, 9/15/99, F06-07, 6/30/99; RTS-SE F05-07, 9/99). RTS-EE units F08-10 and RTS-SE units F08-15 to be verified and available for future shipments due 6/1/2000. (Note that RTS-EE units F01-F03 and RTS-SE units F01-F04 will have been shipped by 6/7/99.) c) Interim Control Unit (ICU) CDR/Verification Review (L-10 mo, currently 7/99) d) ISIS-RTS Verification Review (L-10 mo, currently 7/99) e) Software CDR/Verification Review (L-10 mo, currently 7/99) f) ICU/ ISIS-RTS/Software Preship Review (L-6 mo, currently 11/99) g) RTS Customer Site integration and checkouts (as required for RTS-EE and RTS-SE units) h) ICU, ISIS-RTS Phase III Safety Review (L-6 mo, currently 11/99) i) Ground Operations Readiness Review (L-2 mo, currently 2/00) j) ICU, ISIS-RTS Launch (currently 4/00, ISS flight 6A) | | | | | |
| TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | PAGE NO. 5 of 6 | |
|---|---|---------------------------------|--|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | RFP3 - 094978 | | | ORDER NO. DO-3 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 3 | Hardware/Software Deliverables: SAMS-II hardware and software design activities are mature with engineering and qualification grade hardware and software available. A majority of RTS-EE and RTS-SE flight components have been previously procured but not assembled. Some flight RTS-EE, RTS-SE subsystems will have been shipped for integration. | | | | | | |
| 3a | Hardware Deliverables: To be delivered per the schedule shown in Section 2: a) Flight Remote Triaxial Sensor (RTS) Electronics Enclosures (EE). b) Flight Remote Triaxial Sensor (RTS) Sensor Enclosures (SE). c) One flight Interim Control Unit (ICU) d) Operational Hardware (GSE, SAMS-II specific TSC support hardware, spares, etc.) Delivery of the above items will be to Programs at LeRC, at MSFC in Huntsville Alabama, or at alternate integration sites; at the time mutually agreed to by the contractor, the SAMS-II Project Manager, and the particular Rack Integration Manager. Some units will be shelved for future deliveries (spares, forward plans) | 7 11 1 1 | Ea Ea Ea Lot | | | | |
| 3b | Software Deliverables: a) On orbit command, control software on ICU. b) Boot software allowing ICU, RTS communications. c) Remote Boot Software in the RTS-EE EEPROM. d) Ground station command, control, and data analysis software. | 1 1 1 1 | Lot Lot Lot Lot | | | | |
| 4 | Document Deliverables: a) ICU/ISIS-RTS Pre-Ship Review documentation: non-conformances, problem reports, as-built drawing package, and as-coded software (DID# D-01, PA-06, PA-07, D-04, V-03) b) Additional RTS Pre-Ship Review documentation packages per PSR (DID# D-01, PA-06, PA-07, D-04, V-03) c) Ground Operations Equipment Management Plan d) Verification Reports and data sheets in accordance with the RTS and ICU Verification Plans (DID# V-04) e) Software Management Plan update, addressing the steps for certification to CMM Level 2, by Software Verification Review. (DID# PM-03) | 2 2 1 1 1 2 2 | Ea Ea Ea Ea Ea Ea Ea | | | | |
| TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | PAGE NO. 6 of 6 | |
|---|--|----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER 5/1/1999 | | RFP3 - 094978 | | | ORDER NO. DO-3 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 5 | <u>Available Reference Documents/Information:</u> a) http://www.lerc.nasa.gov/Other/Groups/MMAP/index.html b) Sutliff, T. J., <u>Requirements and Development of an Acceleration Measurement System for International Space Station Microgravity Science Payloads</u> , NASA TM-107484, 1998. | | | | | | |
| 6 | <u>Available Government Furnished Equipment (proved in accordance with 52.245-2):</u> The major hardware items to be furnished include the following: a) An engineering unit of the Remote Triaxial Sensor (RTS) System composed of an Electronics Enclosure (EE) and Sensor Enclosures (SE). b) A qualification unit of the Remote Triaxial Sensor (RTS) System composed of an Electronics Enclosure (EE) and Sensor Enclosures (SE). c) A complete Interim Control Unit engineering unit d) A qualification unit laptop for the Interim Control Unit (ICU) system e) A flight unit laptop for the Interim Control Unit (ICU) system A list of additional equipment will be available from the NASA Project Manager. | | | | | | |
| 7 | <u>Available Government Furnished Facilities:</u> The following government furnished facilities are available to assist in the accomplishment of this delivery order per Attachment J-6a, J-6b: a) Structural Dynamics Laboratory (SDL) support for vibration testing. The URL for this facility is http://www.lerc.nasa.gov/WWW/SDL/Home.html b) The Electromagnetic Compatibility Laboratory support for EMI testing. c) Thermal Environmental Chambers in Bldg. 333 | | | | | | |
| 8 | <u>Available Consultation:</u> The contractor shall have access to consultation with: a) The LeRC SAMS-II Project Manager, b) The LeRC PIMS Project Scientist for SAMS-II, c) EXPRESS Rack Integration Personnel at the MSFC, d) The LeRC Telescience Manager, e) The LeRC Telescience Support Center Manager, f) The LeRC Acceleration Program Manager | | | | | | |
| 9 | <u>Period of Performance</u> The period of performance for this delivery order is 12 months, anticipated to be from 6/7/99 - 6/7/2000. | | | | | | |
| 10 | Clause H.16 Fee Matrix Structure 4 applies. | | | | | | |
|  TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES | | | | | PAGE 1 | OF 4 | PAGES 4 |
|--|--|--|---------------------------|---|-------------------|--|-----------------------------|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| 1. DATE OF ORDER | | 2. CONTRACT NO. (If any) RFP3-094978 | | 6. SHIP TO: | | | |
| 3. ORDER NO. DO-4 | | 4. REQUISITION/REFERENCE NO. | | a. NAME OF CONSIGNEE | | | |
| 5. ISSUING OFFICE (Address correspondence to) | | | | . STREET ADDRESS | | | |
| | | | | c. CITY | | d. STATE | e. ZIP CODE |
| 7. TO: | | | | f. SHIP VIA | | | |
| a. NAME OF CONTRACTOR | | | | 8. TYPE OF ORDER | | | |
| b. COMPANY NAME | | | | <input type="checkbox"/> a. PURCHASE REF YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated. | | <input checked="" type="checkbox"/> b. DELIVERY -- Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract. | |
| c. STREET ADDRESS | | | | | | | |
| d. CITY | | e. STATE | f. ZIPCODE | | | | |
| 9. ACCOUNTING AND APPROPRIATION DATA | | | | 10. REQUISITIONING OFFICE | | | |
| 11. BUSINESS CLASSIFICATION (Check appropriate box(es)) | | | | | | | |
| <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED | | | | | | | |
| 12. F.O.B. POINT NASA Lewis Research Center | | | | 14. GOVERNMENT B/LNO. | | 15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) | |
| 13. PLACE OF | | | | | | 16. DISCOUNT TERMS | |
| e. INSPECTION NASA Lewis Research Center | | f. ACCEPTANCE NASA Lewis Research Center | | | | | |
| 17. SCHEDULE (See reverse for Rejections) | | | | | | | |
| ITEM NO. (a) | SUPPLIES OR SERVICES (b) | | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
| 1 | Extensional Rheology Experiment (ERE) Flight 2. The contractor shall furnish a refurbished Extensional Rheology Experiment (ERE) flight hardware flight unit for Flight 2 in the series of sounding rocket missions in accordance with Exhibit 3 SOW, the following applicable documents, and meeting the Key Milestones and Reviews defined in item 2: a) ERE Science Requirements Document, dated Feb. 1997 b) ERE Science Requirements Compliance Document, dated May 1997 c) ERE Verification Plan, dated December 1998 d) Sounding Rocket User's Handbook, dated Sept. 1988 | | 1 | lot | | | |
| 40 SEE BILLING INSTRUCTIONS ON | 18. SHIPPING POINT | | 19. GROSS SHIPPING WEIGHT | | 20. INVOICE NO. | | 17(h) TOT. (Cont. pages) |
| | 21. MAIL INVOICE TO: | | | | | | |
| | a. NAME | | | | | | 17(i) GRAND TOTAL |
| | b. STREET ADDRESS (or P.O. Box) | | | | | | |
| | c. CITY | | d. STATE | e. ZIP CODE | | | |
| 22. UNITED STATES OF AMERICA BY (Signature) | | | | 23. NAME (Typed) TITLE: CONTRACTING/ORDERING OFFICER | | | |

SUPPLEMENTAL INVOICING INFORMATION

If desired, this order (or a copy thereof) may be used by the Contractor as the Contractor's invoice, instead of a separate invoice, provided the following statement (signed and dated) is on (or attached to) the order: "Payment is requested in the amount of \$_____. No other invoice will be submitted." However, if the Contractor wishes to submit an invoice, the following information must be provided; contract number (if any), order number, item number(s), description of supplies or service, sizes, quantities, unit prices, and extended totals. Prepaid shipping costs will be indicated as a separate item on the invoice. Where shipping costs exceed \$10 (except for parcel post), the billing must be supported by a bill of lading or receipt. When several orders are invoiced to an ordering activity during the same billing period, consolidated periodic billings are encouraged.

RECEIVING REPORT


Quantity in the "Quantity Accepted" column on the face of this order has been: ☐ inspected, ☐ accepted, ☐ received


By me and conforms to contract. Items listed below have been rejected for the reasons indicated.

| | | | | | |
|--------------------|---------|--------------|---------------|--|------|
| SHIPMENT NUMBER | PARTIAL | | DATE RECEIVED | SIGNATURE OF AUTHORIZED U.S.GOV'T REP. | DATE |
| | FINAL | | | | |
| TOTAL CONTAINERS | | GROSS WEIGHT | RECEIVED AT | TITLE | |

REPORT OF REJECTIONS

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| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | 3 of 4 | |
|---|---|----------------------------|-----------------------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | | CONTRACT NO. RFP3-094978 | | ORDER NO. DO-4 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 2 | <u>Milestones and Reviews</u> The contractor shall meet the following milestones and participate in the following management meetings: a) ERE Technical Interchange Meeting (Monthly). b) ERE Pre-Ship Review to be held no later than two weeks before shipment of flight hardware to White Sands Missile Range for integration. c) Mission Readiness Review to be held following integrated testing at White Sands Missile Range. d) ERE Launch on Black Brant Sounding Rocket at White Sands Missile Range, April, 2000. | | | | | | |
| 3 | <u>Hardware/Software Deliverables</u> The contractor shall furnish the following flight hardware and software in the implementation of item 1: a) Refurbished ERE Flight Unit due no later than two weeks prior to PSR. Final acceptance (DD-250) occurs after sounding rocket integration, checkout, and performance acceptance testing. | 1 | Each | | | | |
| | b) ERE Flight Software (modified as necessary) due upon delivery of the ERE Flight Unit. | 1 | Each | | | | |
| 4 | <u>Document Deliverables</u> The contractor shall furnish the following documentation in the implementation of item 1: a) Contractor Project Plan per DID# PM-01 delivered prior to starting refurbishment of the flight hardware. | 2 | Each | | | | |
| | b) ERE Verification Reports per DID# V-04 and in accordance with the ERE Verification Plan delivered no later than three weeks prior to PSR. | 2 | Each | | | | |
| | c) ERE PSR Data Package per DID# D-01 delivered no later than three weeks prior to PSR. | 1 | Each | | | | |
| | d) ERE As-Built drawing revisions (if any) and associated files per DID# D-04 delivered no later than three weeks prior to PSR. | | | | | | |
|  TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE – CONTINUATION | | | | | | 4 of 4 | |
|---|---|-----------------------------|-------------|----------------------|-------------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | | ORDER NO. DO-4 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 4 (continued) | e) ERE As-Coded Software Source List delivered no later than PSR. | 5 | Each | | | | |
| | f) ERE Non-Conformance/Problem and Corrective Action Reports per DID# PA-07 delivered no later than three weeks prior to PSR. | 1 | Each | | | | |
| | g) ERE Launch Site Operations and Procedures per DID# OP-04 delivered no later than three weeks prior to PSR. | 1 | Each | | | | |
| | h) ERE Acceptance Test Plan per DID# V-06 delivered no later than three months prior to PSR. | 2 | Each | | | | |
| 5 | <u>Government Furnished Equipment (provided in accordance with 52.245-2)</u> The following hardware and software shall be furnished by the Government to the contractor in the performance of this delivery order (see ERE Government Furnished Equipment List on MRDOC Website): | 1 | Each | | | | |
| | a) ERE Flight Unit and associated Software upon completion of Flight 1 (Mandatory Usage) | | | | | | |
| | b) ERE Ground Support Equipment and associated software (Mandatory Usage) | | | | | | |
| | c) ERE Ground Handling Equipment items (Mandatory Usage) | | | | | | |
| | d) ERE Equipment in SEL Laboratory | | | | | | |
| 6 | <u>Government Furnished Facilities</u> The Government shall make available on an as needed basis the following Government facilities: | | | | | | |
| | a) Thermal Environmental Chambers in Building 333 | | | | | | |
| | b) Structural Dynamics Laboratory | | | | | | |
| | c) EMI Laboratory in Building 333 | | | | | | |
| | d) Controlled Access Flight H/W Buildup Laboratory in Building 110 (High Bay) | | | | | | |
| | e) Optics Laboratory (room 128) in Building 110 | | | | | | |
| 7 | <u>Government Contacts</u> The contractor shall have access to consultation with: | | | | | | |
| | a) LeRC ERE Project Manager | | | | | | |
| | b) LeRC ERE Project Scientist | | | | | | |
| | c) Mission Management Personnel at NASA Wallops Flight Facility | | | | | | |
| 8 | <u>Period of Performance</u> The period of performance for this delivery order is 7 months, and is anticipated to be from 10/1/1999 to 4/30/2000. | | | | | | |
|  TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES | | | | | PAGE | OF | PAGES | |
|--|---|--|--------------------------|--|---|---|--------------------|--------------------------------|
| IMPORTANT: Mark all packages and papers with contract and/order numbers. | | | | | 1 | | 4 | |
| 1. DATE OF ORDER | | 2. CONTRACT NO. (If any) RFP3-094978 | | a. NAME OF CONSIGNEE | | | | |
| 3. ORDER NO. DO-5 | | 4. REQUISITION/REFERENCE NO. | | . STREET ADDRESS | | | | |
| 5. ISSUING OFFICE (Address correspondence to) | | | | c. CITY | d. STATE | e. ZIP CODE | | |
| 7. TO: | | | | f. SHIP VIA | | | | |
| | | | | 8. TYPE OF ORDER | | | | |
| a. NAME OF CONTRACTOR | | | | <input type="checkbox"/> a. PURCHASE REF YOUR: _____ Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if Any including delivery as indicated. | | <input type="checkbox"/> b. DELIVERY -- Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract. | | |
| b. COMPANY NAME | | | | | | | | |
| c. STREET ADDRESS | | | | | | | | |
| d. CITY | | e. STATE | f. ZIPCODE | | | | | |
| 9. ACCOUNTING AND APPROPRIATION DATA | | | | 10. REQUISITIONING OFFICE | | | | |
| 11. BUSINESS CLASSIFICATION (Check appropriate box(es)) | | | | | | | | |
| <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED | | | | | | | | |
| 12. F.O.B. POINT | | | 14. GOVERNMENT B/LNO. | | 15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) | | 16. DISCOUNT TERMS | |
| 13. PLACE OF | | | | | | | | |
| a. INSPECTION | | b. ACCEPTANCE | | | | | | |
| 17. SCHEDULE (See reverse for Rejections) | | | | | | | | |
| ITEM NO. (a) | SUPPLIES OR SERVICES (b) | | | QUANTITY ORDERED (c) | UNIT (d) | UNIT PRICE (e) | AMOUNT (f) | QUANTITY ACCEPTED (g) |
| 1 | <u>Microscale Hydrodynamics Near Moving Contact Lines experiment engineering concept formulation.</u> The experiment breadboard development includes an experiment processing module, optics system, and a data acquisition and control system hardware and software. The breadboard shall meet the science requirements specified in the Preliminary SRD. This delivery order covers the engineering concept formulation activities including the following major milestones: MSCALE RDR on September 2001. | | | | | | | |
| 9360inew4 BILLING INSTRUCTIONS ON 9360inew4 | 18. SHIPPING POINT | | 19. GROSS SHIPPINGWEIGHT | | 20. INVOICE NO. | | | 17(h) TOT. (Cont. pages) |
| | 21. MAIL INVOICE TO: | | | | | | | |
| | a. NAME | | | | | | | 17(i) GRAND TOTAL |
| | b. STREET ADDRESS (or P.O. Box) | | | | | | | |
| | c. CITY | | d. STATE | | e. ZIPCODE | | | |
| 2304inew8022. UNITED STATES OF AMERICA BY (Signature) | | | | | 23. NAME (Typed) TITLE: CONTRACTING/ORDERING OFFICER | | | |

SUPPLEMENTALINVOICING INFORMATION

If desired, this order (or a copy thereof) may be used by the Contractor as the Contractor's invoice, instead of a separate invoice, provided the following statement (signed and dated) is on (or attached to) the order: "Payment is requested in the amount of \$ _____. No other invoice will be submitted." However, if the Contractor wishes to submit an invoice, the following information must be provided; contract number (if any), order number, item number(s), description of supplies or service, sizes, quantities, unit prices, and extended totals. Prepaid shipping costs will be indicated as a separate item on the invoice. Where shipping costs exceed \$10 (except for parcel post), the billing must be supported by a bill of lading or receipt. When several orders are invoiced to an ordering activity during the same billing period, consolidated periodic billings are encouraged.

RECEIVINGREPORT

| | | | | | |
|----------|---------|--------------|---------------|--|------|
| Quantity | PARTIAL | | DATE RECEIVED | SIGNATURE OF AUTHORIZED U.S.GOV'T REP. | DATE |
| SHIPMENT | FINAL | | | | |
| NUMBER | | GROSS WEIGHT | RECEIVED AT | TITLE | |

TOTAL CONTAINERS

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| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | PAGENO. 3 of 4 |
|---|---|-----------------------------|-------------|----------------------|---------------|-----------------------------|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | |
| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | ORDER NO. DO-5 | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) |
| 1 continued | Work shall be accomplished consistent with the following documents: a) MRDOC Statement of Work (SOW), Exhibit 3 b) Microscale Hydrodynamics Near Moving Contact Lines Preliminary Science Requirements Document (SRD). | | | | | |
| 2. | <u>Hardware/Software Deliverables:</u> -per SCR engineering concept formulation delivery schedule and SRD to include: a) Experiment Processing Unit b) PIV system c) Free surface optics system d) Data acquisition and control system e) Ground experiment system | | | | | |
| 3. | <u>Document Deliverables:</u> - per engineering concept formulation delivery schedule to include: a) Project Plan, Product Assurance Plan b) RDR package | | | | | |
| 4. | <u>Reference Documents:</u> a) LeR-P6700-000,-001,-002,-003,-004 b) LeR-I6700-003,-005 | | | | | |
| 5. | <u>Government Furnished Facilities:</u> Available facilities per attachment J-6a and b a) Usage elective: 2.2 second drop tower. b) Usage elective: Zero G drop tower. c) Usage elective: KC135 Microgravity Aircraft | | | | | |
| 7632inew120 TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | |

| ORDER FOR SUPPLIES OR SERVICES SCHEDULE -- CONTINUATION | | | | | | PAGE NO. 4 of 4 | |
|---|--|-----------------------------|-------------|----------------------|---------------|-----------------------------|--|
| IMPORTANT: Mark all packages and papers with contract and/or order numbers. | | | | | | | |
| DATE OF ORDER | | CONTRACT NO. RFP3-094978 | | ORDER NO. DO-5 | | | |
| ITEM NO. (A) | SUPPLIES OR SERVICES (B) | QUANTITY ORDERED (C) | UNIT (D) | UNIT PRICE (E) | AMOUNT (F) | QUANTITY ACCEPTED (G) | |
| 6. | <u>Government Furnished Equipment (porvided in accordance with 52.245-5):</u> a) Mechanical drive system breadboard #1 b) Mechanical drive system breadboard #2 | | | | | | |
| 7. | <u>Government Contacts:</u> The contractor shall have access to consultation with: a) MSCALE Project Manager b) MSCALE Project Scientist | | | | | | |
| 8 | <u>Period of Performance</u> The period of performance for this delivery order is 28 months and is anticipated to be from June 7,1999 through September 30, 2001. | | | | | | |
| 9 | Clause H.16 Fee Matrix Structure 4 applies. | | | | | | |
| 7632inew120 TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) | | | | | | | |